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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,558

04/16/2004

Vladimir Lifshits

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EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

01/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,558	Applicant(s) LIFSHITS, VLADIMIR	
	Examiner Tony Chuo	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-11 is/are allowed.
- 6) ☒ Claim(s) 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/12/08 has been entered.

Response to Amendment

2. Claims 1, 4-11, and 13-20 are currently pending. Claims 2, 3, and 12 are cancelled. Claims 13-19 are withdrawn from further consideration as being drawn to a non-elected invention. The amended claims do overcome the previously stated 103 rejections of claims 1 and 4-11. However, upon further consideration, claim 20 stands rejected under the following 103 rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woods et al (US 2002/0006535) in view of Haltiner, Jr. et al (US 2003/0235733).

The Woods reference discloses a method of operating an integrated power module that generates an anode exhaust gas including combustible components comprising: receiving the anode exhaust gas from the fuel cell "118" at an elevated temperature; quenching the temperature of the anode exhaust gas by transferring heat from the anode exhaust gas to the inlet air "112" before the cathode exhaust gas (air) is added to the anode exhaust gas, wherein a flexible heat transfer barrier wall "126" exchanges heat between the anode exhaust gas and the inlet air to form a cooled anode exhaust gas; adding cathode exhaust gas (air) to the cooled anode exhaust gas to form an oxidizable anode gas mixture inside the combustor "120"; catalytically oxidizing the oxidizable anode gas mixture to form an effluent; and heating the cathode exhaust gas and the effluent by adding additional air and fuel to the combustor to generate additional heat (See paragraphs [0020],[0027],[0044]). Examiner's note: Since the anode exhaust gas and the cathode exhaust gas are combusted inside the combustor, it is inherent that the amount of air that is added to the anode gas is sufficient for oxidation of the combustible components to form an oxidizable anode gas mixture. In addition, the quenching of the temperature of the anode exhaust gas inherently lowers the local peak temperature developing during forming the mixture.

However, Woods et al does not expressly teach a step of flowing the effluent from the catalytic oxidizer to the fuel cell. The Haltiner reference discloses a step of

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flowing the effluent "115" from the afterburner "66" to a manifold surrounding stack "44" and "46" (See paragraph [0039]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Woods method of operating an integrated power module to include a step of flowing the effluent from the catalytic oxidizer to the fuel cell in order to more efficiently utilize the heat generated by the combustor to heat the fuel cell such as during start-up.

Response to Arguments

5. Applicant's arguments filed 11/12/08 have been fully considered but they are not persuasive.

The applicant argues that Woods makes no attempt to transfer heat from the anode exhaust gas to the air before the two are mixed and prior to oxidizing the fuel remaining in the anode exhaust gas in combustor 120. There is some cooling of the anode gas by air 112 flowing downwardly along conduit 114 to reformer 116 and some corresponding heating of that air. However, the so-cooled anode exhaust gas and so-heated air are not mixed thereafter. The examiner disagrees that the so-cooled anode exhaust gas and the so-heated air are not mixed thereafter. Woods discloses that inlet air 112 is diverted at orifice 128 to the fuel cell 118 and enters the cathode manifold of the fuel cell. The cathode exhaust gas from the fuel cell is then directed to the combustor 120. This cathode exhaust gas is construed as the so-heated air.

Therefore, the so-cooled anode exhaust gas and the so-heated air are mixed thereafter

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in the combustor. There is no limitation in claim 20 that requires ambient air being added to the anode gas.

Allowable Subject Matter

6. Claims 1 and 4-11 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The Woods reference discloses a method of operating an integrated power module that generates an anode exhaust gas including combustible components comprising: receiving the anode exhaust gas from the fuel cell "118" at an elevated temperature; quenching the temperature of the anode exhaust gas by transferring heat from the anode exhaust gas to the inlet air "112" before the cathode exhaust gas (air) is added to the anode exhaust gas, wherein a flexible heat transfer barrier wall "126" exchanges heat between the anode exhaust gas and the inlet air to form a cooled anode exhaust gas; adding cathode exhaust gas (air) to the cooled anode exhaust gas to form an oxidizable anode gas mixture inside the combustor "120"; catalytically oxidizing the oxidizable anode gas mixture to form an effluent; and heating the effluent by adding additional air and fuel to the combustor to generate additional heat. The Haltiner reference discloses a step of flowing the effluent "115" from the afterburner "66" to a manifold surrounding stack "44" and "46" (See paragraph [0039]). However, Woods as modified by Haltiner does not expressly teach a step of adding ambient air to the anode gas to form an oxidizable anode gas mixture.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571)272-0717. The examiner can normally be reached on M-F, 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795